

Figure 1a. The total parkwide acreage of each exotic species classified with high invasiveness.

These acreages were determined by adding the areas of mapped polygons in forests (including forested wetlands), roadside, trailside, fields and non-forested wetlands containing each invasive exotic species. Invasiveness classifications are based on the list, “Invasive Alien Plant Species in Virginia”, compiled by the Virginia Division of Natural Heritage in cooperation with the Virginia Native Plant Society. However, some changes and additions were made at the advice of professionals in the field.

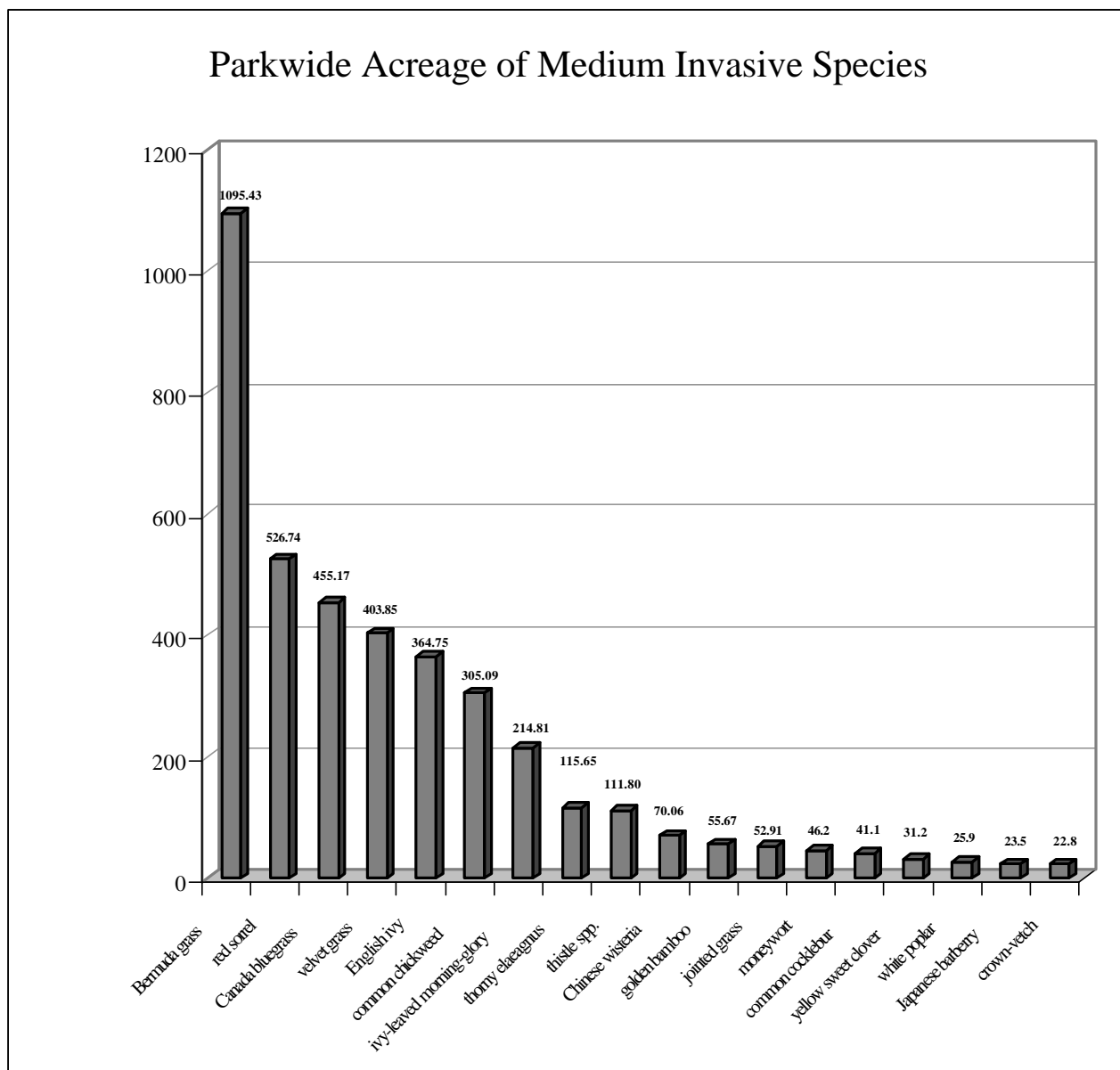


Figure 1b. The total parkwide acreage of each exotic species classified with medium invasiveness and covering > 20 acres.

These acreages were determined by adding the areas of mapped polygons in forests (including forested wetlands), roadside, trailside, fields and non-forested wetlands containing each invasive exotic species. Invasiveness classifications are based on the list, “Invasive Alien Plant Species in Virginia”, compiled by the Virginia Division of Natural Heritage in cooperation with the Virginia Native Plant Society. However, some changes and additions were made at the advice of professionals in the field.

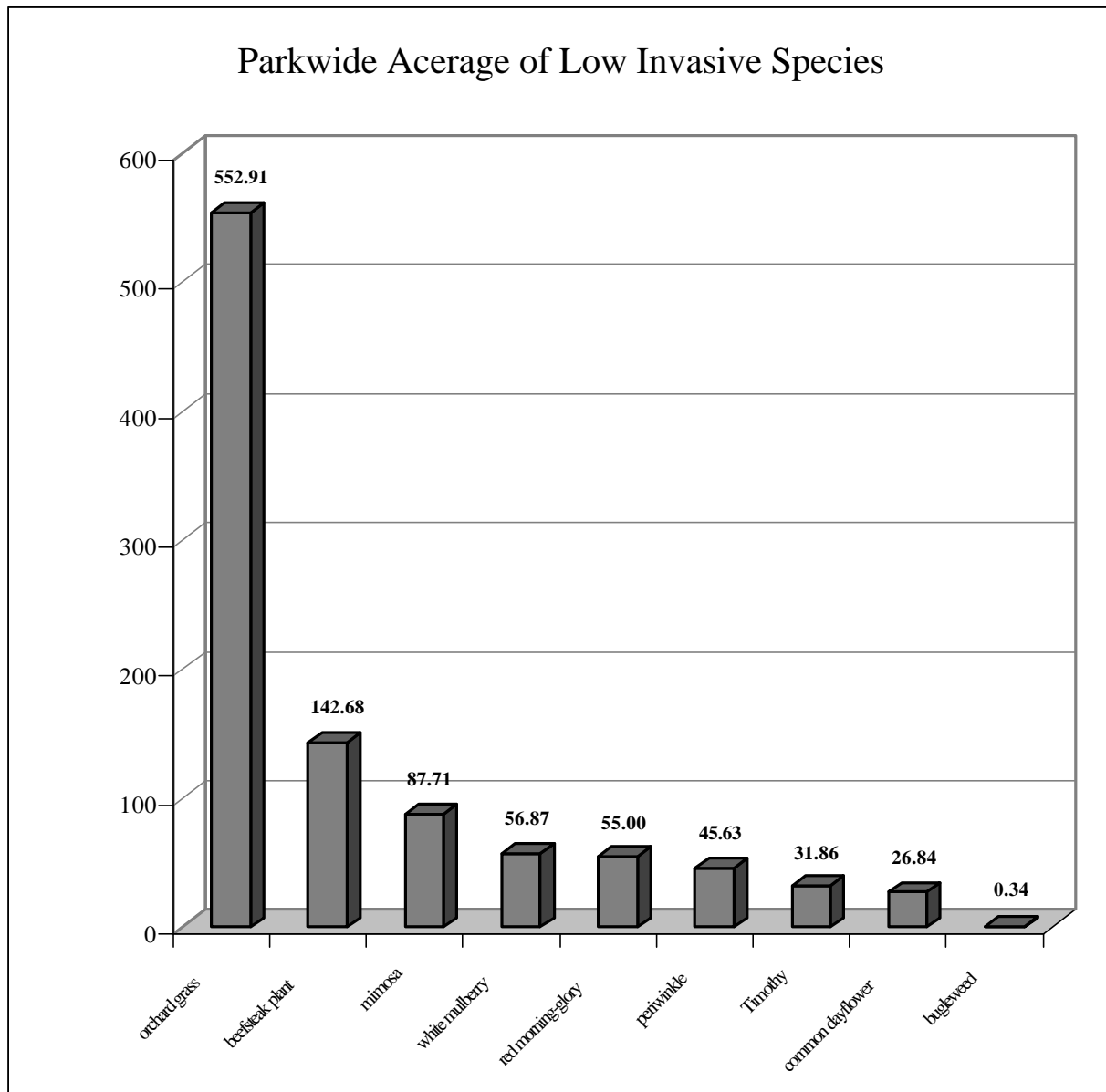


Figure 1c. The total parkwide acreage of each exotic species classified with low invasiveness.

These acreages were determined by adding the areas of mapped polygons in forests (including forested wetlands), roadside, trailside, fields and non-forested wetlands containing each invasive exotic species. Invasiveness classifications are based on the list, “Invasive Alien Plant Species in Virginia”, compiled by the Virginia Division of Natural Heritage in cooperation with the Virginia Native Plant Society. However, some changes and additions were made at the advice of professionals in the field.

Table 1. Summary of invasive plant distribution throughout all sections of the park.

Species	Area (Acres)	Distribution
Aneilima (<i>Murdannia keisak</i>)	~36 ~28: fields ~8: roadsides	Yorktown: Found within three fields Jamestown: Found within <0.5 acres of roadside Colonial Parkway: Found within ~8 acres of parkway corridor
Autumn Olive (<i>Elaeagnus umbellata</i>)	~27	Yorktown: Several individuals were found scattered within ~1 acre of roadside, along the edges of 2 fields, and in yards and wooded areas of the village. Colonial Parkway: Individuals scattered within ~2 acres of parkway corridor Route 17: Planted as a hedge in the median strip and scattered individuals in the surrounding roadside.
Beefsteak plant (<i>Perilla frutescens</i>)	~143 ~52: forests ~49: fields ~41: roadsides	Yorktown: Approximately 10 populations were found, five in fields, and five in open forest. It was also found within ~19 acres of roadside Jamestown: Five populations of relatively small size and low plant density were found in open woods and adjacent to fields Colonial Parkway: Found within ~22 acres of parkway corridor Neck of Land: Found scattered along an old route 31 Ringfield: One small population was found adjacent to old tour road
Bermuda grass (<i>Cynodon dactylon</i>)	~1095 ~17: forests ~386: fields ~693: roadsides	Yorktown: Two small populations were found in a regenerating old-field habitat a short distance from the west tour road. Also found within 23 fields and ~75 acres of roadside Jamestown: Found within ~16 acres of roadside Green Spring: Found within <1 acre of roadside Colonial Parkway: Found within ~601 acres of parkway corridor
Bugleweed (<i>Ajuga reptans</i>)	<1	Yorktown: One very small population was found adjacent to Route 637
Canada Bluegrass (<i>Poa compressa</i>)	~455 ~265: fields ~166: roadsides ~3: trailside ~21: forest	Yorktown: Found within 22 fields, ~11 acres of roadside, ~3 acres of trailside, and in yards and wooded areas of the village Jamestown: Found within ~2 acres of roadside Green Spring: Found within ~2 acres of roadside Colonial Parkway: Found within ~150 acres of parkway corridor
Chinese Lespedeza (<i>Lespedeza cuneata</i>)	~506 ~3: forests ~333: fields ~169: roadsides <1: trailsides	Yorktown: One small population was found in a regenerating old-field habitat a short distance from the west tour road and in two other fields, generally along earthworks and infrequently mowed areas. It was also found within ~26 acres of roadside Jamestown: Found within ~3 acres of roadside Green Spring: Two dense populations found in early successional area adjacent to a field Colonial Parkway: Found within 131 of parkway corridor Neck of Land: Found in one small population and along old route 31

Species	Area (Acres)	Distribution
Chinese Privet (<i>Ligustrum sinense</i>)	~787 ~282: forests ~371: roadsides <1: trailsides ~132: fields	Yorktown: Greater than 20 populations were found concentrated in forest and streamside habitats on the eastern side of Yorktown. Common in wooded areas of the village. Populations were typically large and consisted of many large individuals. It was also found within ~47 acres of roadside. Common along wooded edges of fields. Jamestown: Four small populations of low plant density were found on the western end of the island. Individuals were all relatively small. It was also found within ~1 acre of roadside Green Spring: One large population was found adjacent to a field Colonial Parkway: Found within ~320 acres of parkway corridor Neck of Land: Two large and two small populations were found in old homesite areas. It was also found along old route 31
Chinese Wisteria (<i>Wisteria sinensis</i>)	~70 ~9: forests ~8: roadsides ~53: fields	Yorktown: Nine populations were found along roadsides (covering ~26 acres of roadside), three of which extend into forest habitat Colonial Parkway: Nine populations were found within the parkway corridor (covering ~6 acres), three of which were relatively large Ringfield: One large, densely distributed population was found adjacent to the old tour road
Common Chickweed (<i>Stellaria media</i>)	~305 ~129: forests ~145: fields ~23: roadsides ~7: trailsides	Yorktown: Nearly 20 populations of varying size and plant density were found along streamsides and in disturbed forest habitat. It was also found within 2 fields, ~16 acres of roadside, ~7 acres of trailside, and within the village. Jamestown: Greater than 20 populations of varying size and plant density were found in disturbed forest habitat. It was found within <1 acre of roadside Green Spring: Three large populations were found adjacent to fields, and one small population was found along a streamside. Colonial Parkway: Found within ~6 acres of parkway corridor
Common Cocklebur (<i>Xanthium strumarium</i>)	<1	Yorktown: A single small population found along the earthworks at southern edge of in field 22
Common Dayflower (<i>Commelina communis</i>)	~27 ~12: forest ~5: field ~9: roadside	Yorktown: A small population found within one field. Also found within ~9? Acres of roadside. Colonial Parkway: Found sparsely within ~7 acres of parkway corridor
Common reed (<i>Phragmites australis</i>)	~73	Yorktown: One large population was found lining the northwest tributary of Wormley pond. A much smaller population was found at the southern end of Yorktown Creek Jamestown: Ten populations of varying size and density were found distributed throughout the Jamestown wetlands Colonial Parkway: Three extensive populations were found (Mill Creek, College Creek and adjacent to Naval Weapons Station) along with several small populations, within ~50 acres of parkway corridor Ringfield: One small population was found lining a creek Tributary Neck of Land: Four small populations and one larger population were found in the non-forested wetlands west of the forested area. Several of these populations located within the Neck-O-Land Natural Heritage Area.
Crownvetch (<i>Coronilla varia</i>)	<1	Yorktown: Found in one field Colonial Parkway: Found within <0.5 acres of parkway corridor

Species	Area (Acres)	Distribution
English Ivy (<i>Hedera helix</i>)	~365 ~76: forests ~113 roadsides <1: trailsides ~175: fields	Yorktown: More than ten populations of varying size and plant density were found on the eastern end of the park. It is common in the village. It was also found within ~9 acres of roadside. Green Spring: One small population found adjacent to field Colonial Parkway: Found, often densely distributed, within ~103 acres of the parkway corridor. Neck of Land: One small and 1 large population found in two old homesite areas
Gill Over the Ground (<i>Glechoma hederacea</i>)	~165 ~30: forests ~98: roadsides <1: trailsides ~36: fields	Yorktown: Four relatively small populations were found in disturbed forest, in addition to small populations scattered throughout the village. It was also found within ~5 acres of roadside and in low density in 2 fields. Jamestown: Eight relatively small populations were found in disturbed forest and along fieldsides. It was also found within ~5 acres of roadside. Green Spring: Two large populations were found adjacent to a field Colonial Parkway: Found within ~86 acres of parkway corridor Ringfield: One small population was found in forested area Neck of Land: Found along old route 31
Golden Bamboo (<i>Phyllostachys aurea</i>)	~56 ~31: forests ~25: roadsides	Yorktown: Eleven* populations were found lining steep slopes, within roadside (~2 acres) and in areas of past or present development. Eight of the 11 populations are extremely mature with many large individuals. Jamestown: Nine small populations* were found along roadsides (~4 acres). Most individuals have not yet reached two meters in height. One mature population was found near the glasshouse and Jamestown entrance road. Colonial Parkway: Twenty small concentrations were found within ~18 acres of the parkway corridor * Neck of Land: One large population was found in old homesite area * It is likely that populations recorded as being immature or "small" are actually populations of native cane <i>Arundinaria sp.</i> , which was initially confused with bamboo in surveys. Identity of populations should be confirmed before mitigation actions are taken.
Japanese Barberry (<i>Berberis thunbergii</i>)	~1 <1: forest <1: roadside <1: field	Yorktown: A small population was found in a single field and another single shrub was found in the forest adjacent to Route 238 near the trailer park Jamestown: Four small populations were found just south of the first turnout along the loop road
Japanese Honeysuckle (<i>Lonicera japonica</i>)	Parkwide	Dispersed, most often sparsely, throughout all areas of the park
Japanese Knotweed (<i>Polygonum cusidatum</i>)	~19 ~5: fields ~13: forest <1: roadsides	Yorktown: Five small patches were found in the village and vicinity of the visitors center, as well as one small patch within roadside.
Japanese Stiltgrass (<i>Microstegium viminium</i>)	Parkwide	Densely distributed throughout all roadsides, stream corridors, trailsides, and forest openings

Species	Area (Acres)	Distribution
Johnson grass (<i>Sorghum halapense</i>)	~359 ~3: forest ~312: fields ~42: roadsides ~1: trailsides	Yorktown: One population was found in an old landfill area adjacent to the southern end of the east tour road. It was also found sparsely distributed within ~17 acres of roadside and in small patches within 4 fields. Jamestown: Found sparsely distributed within ~2 acres of roadside Green Spring: Found within ~3 acres of roadside Colonial Parkway: Found within ~18 acres of parkway corridor Neck of Land: Several clumps found along old route 31
Jointed grass (<i>Arthraxon hispidus</i>)	~53	Yorktown: Found within 9 fields, usually in poorly drained areas
Kudzu (<i>Pueraria lobata</i>)	~1	Colonial Parkway: One population was found adjacent to the Williamsburg entrance ramp Yorktown: A single vine was near bank of York River along edge of field #1A
Mimosa (<i>Albizia julibrissin</i>)	~88 ~18: forests ~44: fields ~26: roadsides	Yorktown: Trees and seedlings were scattered within ~5 acres of roadside, including ~2 acres of route 17. Several seedlings were found in three fields. Also found two small patches within wooded areas of the village Colonial Parkway: Trees and seedlings were scattered within ~21 acres of parkway corridor Neck of Land: One reproducing individual found along old route 31
Moneywort (<i>Lysimachia nummularia</i>)	~46 ~22: roadside ~24: field	Yorktown: Found within a single field Colonial Parkway: Found within ~2 acres of parkway corridor
Morning-glory spp. (<i>Ipomoea purpurea</i> , <i>coccinea</i> and <i>hederacea</i>)	~12	Yorktown: Found sparsely distributed throughout <0.5 acre of roadside. Colonial Parkway: Found sparsely distributed throughout ~12 acres of parkway corridor
Multiflora Rose (<i>Rosa multiflora</i>)	~117 ~14: forests ~60: roadsides ~43: fields	Yorktown: areas of low plant density were found within ~6 acres of roadside, eight of which extend into forest and field edges. Also found along the periphery of one additional field. Jamestown: Three populations were found within ~1 acre of roadside Colonial Parkway: Found scattered within ~51 acres of parkway corridor Neck of Land: Two small populations were found in a forest opening and along old route 31 Green Spring: One large population was found adjacent to a field and two concentrations were found within ~1 acre of roadside
Orchard grass (<i>Dactylis glomerata</i>)	~553 ~13: forests ~472: fields ~68: roadsides	Yorktown: Found in low density in 20 fields and ~16 acres of roadside Jamestown: Found in ~2 acres of roadside Green Spring: Found in 1 large population adjacent to field and in ~2 acres of roadside Colonial Parkway: Found in ~48 acres of roadside Ringfield: Found in two large old field habitats
Oriental Bittersweet (<i>Celastrus orbiculatus</i>)	~3 <1: forests ~3: roadsides	Yorktown: One small population was found in the forest adjacent to Moore House Road within <0.1 acre of roadside Colonial Parkway: Three small populations were found within ~2 acres of parkway corridor
Periwinkle (<i>Vinca minor</i>)	~46 ~26: fields ~16: forests ~4: roadsides	Yorktown: Found in <0.5 acres of roadside and common throughout forested areas of the village. Green Spring: Found in 1 field.

Species	Area (Acres)	Distribution
Princess tree (<i>Paulonia tomentosa</i>)	~18 ~12: forests ~6: roadsides	Yorktown: Four small populations were found in forest habitat on the western side of Yorktown and one small population in the village. It was also found in <0.1 acre of roadside. Jamestown: Greater than 20 populations were found distributed throughout the forest. The majority of the populations were small and of low plant density. Individuals were also found scattered in <1 acre of roadside Colonial Parkway: Individuals were scattered through ~5 acres of parkway corridor Ringfield: Several trees found along the old tour road
Red Sorrel (<i>Rumex acetosella</i>)	~527 ~1: forests ~516: fields ~9: roadsides	Yorktown: Found in five fields <1 acre of roadside Jamestown: Found in <1 acre of roadside Green Spring: Found in both fields, a large, open area adjacent to a field, and in <0.5 acres of roadside Colonial Parkway: Found in ~8 acres of parkway corridor
Sweet-clover spp. (<i>Melilotus alba</i> and <i>officinalis</i>)	~46 ~27: fields ~17: roadsides ~2: forest	Yorktown: Found in low density within 15 fields and ~1 acre of roadside Green Spring: Found in <0.5 acre of roadside Colonial Parkway: Found in ~16 acres of roadside
Tall Fescue (<i>Festuca elatior</i>)	~904 ~512: fields ~23: forest ~365: roadsides ~4: trailside	Yorktown: Found in varying density in greater than 22 fields. Throughout Park: Relatively common along shaded grassy roadsides.
Thistle spp. (<i>Cirsium arvense</i> and <i>vulgare</i>)	~112 ~108: field ~4: roadsides	Yorktown: Found in ~4 acres of roadside and in low density in five fields where it is usually concentrated along earthworks
Thorny Elaeagnus (<i>Elaeagnus pungens</i>)	~65 ~2: forests ~54: fields ~9: roadsides	Yorktown: Five relatively small populations of low plant density were found in forest habitat throughout Yorktown. Individuals were also scattered throughout two fields and ~1 acre of roadside Colonial Parkway: Individuals scattered throughout ~8 acres of parkway corridor, with a concentration around the Williamsburg entrance ramp
Timothy (<i>Phleum pratense</i>)	~32 ~25: fields ~6: forest ~1: roadside	Yorktown: Found in <1 acre of roadside and in low density in one field. Also found in low density in one wooded are of the village. Green Spring: Found in <1 acre of roadside
Tree of Heaven (<i>Ailanthus altissima</i>)	~224 ~71: forests ~77: fields ~76: roadsides	Yorktown: Greater than ten populations were found in open or disturbed forest habitat. The majority of the populations were large and consisted of many large individuals or densely distributed saplings. It was found in 1 field and in ~5 acres of roadside Jamestown: Seven populations were found in open forest habitat. Several of the populations were large and consisted of many large individuals or densely distributed saplings. Individuals were also found in ~1 acre of roadside Green Spring: Two small populations were found in <1 acre of roadside Colonial Parkway: Found in many populations of variable size and density throughout ~96 acres of the parkway corridor. Populations were densely concentrated around the Williamsburg entrance ramp Neck of Land: Small populations were found in a forest opening and adjacent to old route 31 Ringfield: One small population was found adjacent to old tour road

Species	Area (Acres)	Distribution
Velvet grass (<i>Holcus lanatus</i>)	~404 ~4: forests ~344: fields ~56: roadsides <1: trailsides	Yorktown: Several small populations were found in a regenerating old-field habitat a short distance from the west tour road. It was also found in 8 fields and in ~39 acres of roadside Jamestown: Found in ~2 acres of roadside Green Spring: Found in <1 acre of roadside Colonial Parkway: Found in ~15 acres of roadside
White Mulberry (<i>Morus alba</i>)	~57 ~16: roadsides ~24: forest ~17: fields <1: trailsides	Yorktown: Individual trees scattered throughout ~6 acres of roadside, <1 acre of trailside, and along the periphery of one field. Also found within wooded areas of the village and the eastern portions of Yorktown. Green Spring: Individual trees scattered throughout <0.5 acres of roadside Colonial Parkway: Individual trees scattered throughout ~9 acres of parkway corridor
White Poplar (<i>Populus alba</i>)	~26 ~7: roadsides ~10: forest ~9: fields <1: trailsides	Yorktown: Populations found adjacent to Cook Road (<1 acre of roadside), the trail to Washington Headquarters and in wooded areas and yards within the village. Colonial Parkway: Five small, and 1 large grove were found within ~6 acres of parkway corridor
Wineberry (<i>Rubus</i> <i>Phoenicolasius</i>)	~5 ~1: forests ~4: roadsides	Jamestown: Five populations of low density were found in light gaps of relatively dry forest habitat. Seven small populations were also found within ~1 acre of roadside Green Spring: One population was found adjacent to roadside Colonial Parkway: Seven small populations were found within ~2 acres of parkway corridor